

## REMARKS

Claims 1- 18 are in this application and are presented for consideration. Claims 1, 6 and 10 have been amended, and new claims 15-18 have been added.

The claims have been amended to address the Examiner's objections, and to place the application in better form. The claims have also been amended to further highlight and more clearly point out the important features of the invention. Applicant thanks the Examiner for the careful reading of this application, and for pointing out discrepancies.

In particular claim 1 has been amended to set forth that an upper limitation of the ratio of a short radius to a long radius, is "less than 0.95". This upper limitation is described in the specification at paragraph [0072]. Claim 1 has also been amended to set forth that two pavilion main facets positioned opposite to each other with respect to the central axis, two crown main facets that the two pavilion main facets face through the girdle, and a table facet cross vertically one of the eight-dividing planes. This is described in the specification at paragraphs [0040], [00411], [00471], [0052], and inter alia.

New independent claim 16 has been added to define groups of main facets which are arranged opposite each other with regard to a central axis of the diamond, and are facing each other across the girdle of the diamond. Each of these groups of main facets is set forth as being substantially at right angles to a respective dividing plane of the diamond, which has been previously defined. This is also described in the specification at paragraphs [0040], [00411], [00471], [0052], and inter alia.

The oval-cut diamond of the present invention has an oval or oval-like girdle having

a ratio of a short radius to a long radius of 0.6 or more and less than 0.95. The present invention also forms a straight central axis crossing vertically the table facet, and eight-dividing planes composed of a central plane containing a long axis of a contour line of a girdle cross-section and being vertical to the table facet, a plane containing a short axis of the contour line of the girdle cross-section and the central axis, and planes dividing an angle around the central axis between the plane containing the short axis and the central axis and the central plane equally into two. There are four pairs of pavilion main facets, of which each pair is composed of two pavilion main facets positioned opposite to each other with respect to the central axis. There are also two crown main facets that each pair of pavilion main facets face through the girdle, each pair of pavilion main facets, the corresponding facing crown main facets and the table facet cross vertically one of the eight-dividing planes. Each pair of pavilion main facets, the two facing crown main facets and the table facet have a common plane vertical to all of the two pavilion main facets, the two crown main facets and the table facet within the two pavilion main facets, the two crown main facets and the table facet. The oval-cut diamond shows a strength or magnitude of reflection light almost equal to that of a round brilliant cut diamond.

A round brilliant cut diamond that has a circular girdle, and a square girdle diamond can have a common vertical plane in two pavilion main facets of each of four pairs of pavilion main facets, of which each pair is composed of two pavilion main facets positioned opposite to each other with respect to a central axis of the round brilliant cut diamond or the square girdle diamond, two crown main facets that the two pavilion main facets face through the

girdle and a table facet.

A conventional oval cut diamond, however, does not have a common vertical plane in two pavilion main facets of each of four pairs of pavilion main facets, of which each pair is composed of two pavilion main facets positioned opposite to each other with respect to a central axis of the conventional oval cut diamond. Because of that, light coming into the oval cut diamond through the table facet or crown facets and reflected on a pavilion main facet does not proceed to an opposite pavilion main facet. Also, because light reflected on a pavilion main facet does not go toward a crown main facet or the table facet, reflection strength is weakened and reduces brilliancy.

Although the oval-cut diamond of the invention has an oval or oval-like girdle, the diamond can show reflection strength close to the round brilliant cut diamond because the diamond has a common vertical plane in two pavilion main facets of each of four pairs of pavilion main facets, of which each pair is composed of two pavilion main facets positioned opposite to each other with respect to a central axis of the oval-cut diamond, two crown main facets that the two pavilion main facets face through the girdle and a table facet.

Further, the oval-cut diamond of the invention has the same angle of at least seven pavilion main facets among eight pavilion main facets with the table facet, so that a pattern of reflection light is symmetric.

Claims 1-14 have been rejected as being obvious over Itzkowitz '219 in view of Kedem '275.

Itzkowitz depicts facets in crowns and pavilions of a round brilliant cut diamond, a

pear-shaped diamond, a marquise diamond (Figs. 2c and 3c) and an oval diamond (Figs. 2d and 3d). Figs. 2c, 2d, 3c and 3d show facets in crowns and pavilions of the marquise diamond and the oval diamond. However, with respect to crown main facets and pavilion main facets interposed between the long axes and short axes in the drawings, it is not shown that two pavilion main facets disposed opposite to each other with respect to a central axis, two crown main facets facing the two pavilion main facets through a girdle and a table facet have a common vertical plane within them.

It appears from Figs. 2c and 3c that the two pavilion main facets and the two crown main facets extending along the long axis of the marquise diamond cross vertically a common plane and that two pavilion main facets and the two crown main facets extending along the short axis of the marquise diamond cross vertically a common plane. But, among pairs of two pavilion main facets and pairs of two crown main facets, of which a pair is composed of two pavilion or crown main facets positioned opposite to each other with respect to the central axis, it is not understood whether a pair of pavilion main facets and a pair of crown main facets interposed between the long and the short axes, that is, disposed diagonally, have a common vertically crossing plane or not. Itzkowitz does not include any description about directions of those facets, either. Therefore 219 is silent with regard to the orientation of the main facets between the long and short axes. Since the particular orientation of these main facets between the long and short axes is not describe, 219 cannot anticipate the orientation of these facets as set forth in the present independent claims.

It appears from Figs. 2d and 3d that the two pavilion main facets and the two crown

main facets extending along the long axis of the oval diamond cross vertically a common plane and that two pavilion main facets and the two crown main facets extending along the short axis of the oval diamond cross vertically a common plane. But, among pairs of two pavilion main facets and pairs of two crown main facets, of which a pair is composed of two pavilion or crown main facets positioned opposite to each other with respect to the central axis, it is not understood whether a pair of pavilion main facets and a pair of crown main facets interposed between the long and the short axes, that is, disposed diagonally, have a common vertically crossing plane or not. Itzkowitz does not include any description about directions of those facets, either.

Therefore, Itzkowitz fails to disclose that, with respect to all of four pairs of pavilion main facets, of which a pair is composed of two pavilion main facets positioned opposite to each other with respect to a central axis, each pavilion main facet in each pair of the pavilion main facets has a crown main facets that the pavilion main facet faces through a girdle and that the two pavilion main facets of each pair of the pavilion main facets, the two crown main facets and a table facet have a common vertically crossing plane within them.

Kedem discloses a rectangular-girdle diamond with a round crown and a round pavilion, and a square-girdle diamond with a round crown and a round pavilion. In Kedem, four pairs of pavilion main facets, of which each pair is composed of two pavilion main facets positioned opposite to each other with respect to a central axis, each pavilion main facet in each pair of the pavilion main facets has a crown main facet that the pavilion main facet faces through a girdle and that the two pavilion main facets of each pair. However, Kedem only

discloses this for a rectangular-girdle diamond with a round crown and a round pavilion, and a square-girdle diamond with a round crown and a round pavilion.

However, in a general known diamond with an oval or oval-like girdle, two pavilion main facets 846 extending diagonally do not have a common vertically crossing plane within them, as explained in Specification, paragraph [00701]. Applicant finds no teaching nor suggestion in 275 to arrange the individual groups of facets that oppose or face each other to have a common vertical plane in an oval shaped diamond. Therefore the combination of 219 and 275 would not lead a person of ordinary skill to arrange individual groups of main facets according to the independent claims. The independent claims therefore define over the combination.

The invention provides a diamond with an oval or oval-like girdle in which even two pavilion main facets interposed between a long axis and a short axis of a contour line of a girdle cross-section and diagonally extending have a common vertical plane to enhance reflection strength.

Although a diamond with a round or square girdle may have a common vertical plane within two pavilion main facets which are positioned opposite to each other with respect to a central axis, two crown main facets that the two pavilion main facets face through a girdle and a table facet, prior art oval-cut diamonds are not known to have a common vertical plane. Particularly, a diamond with an oval or oval-like girdle which has a smaller ratio of a short radius to a long radius of the oval or oval-like girdle does not have such a common vertical plane. Even when it is an oval-cut diamond, the diamond with a girdle shape of a

short-long radius ratio of 0.95 or more and close to round can have a nearly common vertical plane within five facets including two pavilion main facets, two crown main facets and a table facet, though the nearly common vertical plane is not precisely common and vertical. So, the oval-cut diamond can provide reflection strength close to that of a round brilliant cut diamond. But, when the ratio of a short radius to a long radius becomes less than 0.95, the common plane of the five facets deviates from vertical and the reflection strength decreases.

Therefore, the oval-cut diamond of the invention, despite an oval or oval-like girdle with a short-long radius ratio of 0.6 or more and less than 0.95, shows enhanced brilliancy by having a common vertical plane within the five facets.

The present invention provides an oval shaped diamond which can better take advantage of a raw diamond's shape, thus making for a larger finished diamond, while still keeping most of the brilliancy that is optimally obtained by round diamonds. The present invention is an improvement over prior art oval shaped diamonds and therefore worthy of patent protection.

Kedem applies the concept of determining configurations of pavilion main facets and pavilion angles by a circle circumscribing a contour line of a girdle to a diamond with a round pavilion, but does not teach that the concept can be applied to an Itzkowitz oval diamond.

Applicant wishes to point out that many of the statements made in the Office Action appear to be incorrect.

(a) We believe it wrong that the Itzkowitz oval diamond has eight-dividing planes. Itzkowitz does not show a plane dividing an angle between a long axis plane and a short axis

plane in Figs. 2c and 2d of Itzkowitz into two. So, Itzkowitz fails to disclose the concept of eight-dividing planes applied to the Itzkowitz oval diamond. What the Office Action states in connection with eight-dividing planes in the Action are wrong. For example: "The diamond has - - - eight-dividing planes (Figs. 2c, 2d, 3c, 3d, 4c and 4d)." at lines 3 - 40f page 4. "The eight-dividing planes are composed of - - - planes dividing an angle around the central axis between the plane containing the short axis and the central axis and the central plane equally into two (Figs. 2c, 2d, 3c, 3d, 4c and 4d)." at lines 7 to 11 of page 4. "Each of the crown main facets is a tetragon having two opposite vertexes composed of a point, at which each of the eight-dividing planes crosses the girdle upper ridge and - - - (Figs. 2c, 2d, 4c and 4d)." at lines 17 to 21 of page 4. "Each of the pavilion main facets is a tetragon or a part of a tetragon extending from the bottom apex toward a crossing point to eight-dividing planes with the girdle lower ridge, - - - (Figs. 3c, 3d, 4c and 4d)." at lines 9 to 14 of page 5. "Each of at least seven pavilion main facets among the pavilion main facets is formed with opposite vertexes composed of a crossing point of each of the eight-dividing planes with the girdle and the bottom apex (Figs. 2c, 2d, 3c, 3d, 4c and 4d)." at lines 14 to 17 of page 5.

(b) Since two pavilion main facets, two crown main facets and a table facet of Itzkowitz do not have a common vertical plane as discussed above, the statement of lines 4 to 8 of page 6 of the Action is wrong, which is: "Each pair of four pairs of pavilion main facets, of which each pair is composed of two pavilion main facets positioned opposite to each other with respect to the central axis, has two crown main facets facing the two pavilion main facets through the girdle, and the two pavilion main facets, the two crown main facets and the table

facet have a common plane vertical to all of them within them (Figs. 2c, 2d, 3c, 3d, 4c and 4d)."

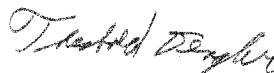
(c) Since a depth of all pavilion main facets, that is, heights from a bottom apex 22c to a lower girdle ridge (lower girdle cross-section) are the same, but lengths of the pavilion main facets projected on the girdle cross-section are different, pavilion angles of the pavilion main facets are not the same. So, the description of lines 17 to 18 of page 9 of the Action is wrong, which is: "Itzkowitz discloses that each of the pavilion main facets has a substantially equal pavilion angle to the table facet (Figs. 2c, 2d, 3c, 3d, 4c and 4d)."

(d) Since a depth of all crown main facets, that is, heights from a table facet to an upper girdle ridge (upper girdle cross-section) are the same, but lengths of the crown main facets projected on the girdle cross-section are different, crown angles of the crown main facets are not the same. So, the description of lines 19 to 21 of page 9 of the Action is wrong, which is: "A crown main facet as disclosed by Itzkowitz that each of the pavilion main facets has the substantially equal pavilion angle faces through the girdle has a substantially equal crown angle to the table facet (Figs. 2c, 2d, 3c, 3d, 4c and 4d)."

If the Examiner has any comments or suggestions which would further favorable prosecution of this application, the Examiner is invited to contact applicant's representative by telephone to discuss possible changes.

At this time applicant respectfully requests reconsideration of this application, and based on the above amendments and remarks, respectfully solicits allowance of this application.

Respectfully submitted  
for Applicant,



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